

### **ABSTRACT OF THE DISCLOSURE**

A method and apparatus for determining motion compensation (MC) which estimates an interpolative MC mode by a forward and backward MC are provided. The method includes: (a) receiving as inputs a forward frame sum of absolute difference (SAD), a sum of a forward top field SAD and a forward bottom field SAD, a backward frame SAD, and a sum of a backward top field SAD and a backward bottom field SAD; (b) identifying a minimum value among the inputs received in step (a); (c) if the minimum value is smaller than a predetermined threshold value, selecting an MC mode corresponding to the minimum value; and (d) if the minimum value is not smaller than the predetermined threshold value, selecting one of an interpolative field MC mode and an interpolative frame MC mode.